

CLAIMS

1. A catheter comprising:
 - a shaft having a proximal end, a distal end, and a wire guide lumen extending through at least a portion thereof;
 - a plurality of intermediate wire guide access ports through a side wall of the shaft for providing access to the wire guide lumen, the intermediate wire guide access ports located between and spaced apart from the proximal and distal ends; and
 - at least one slidable tube for allowing and restricting access to at least one of the plurality of the intermediate wire guide access ports.
2. The catheter of claim 1, wherein the catheter is adapted for use with an endoscope having a working channel extending between a distal port and a proximal port and wherein the plurality of intermediate wire guide access ports are accessible outside the endoscope when the catheter is positioned through the working channel such that the distal end of the catheter and the distal port of the working channel are substantially aligned.
3. The catheter of claim 2, the catheter further comprising means for performing a medical procedure at the catheter distal end, wherein at least one of the plurality of intermediate wire guide access ports is near the proximal port of the working channel of the endoscope when the catheter is positioned inside the working channel such that the means is positioned an optimal distance from the distal port of the working channel to perform the medical procedure.
4. The catheter of claim 3, wherein the catheter includes a compression member, which has a portion extending external of the catheter, wherein the means for performing a medical procedure comprises the portion of the compression member extending external of

the catheter, and wherein at least one of the plurality of intermediate wire guide access ports is near the proximal port of the endoscope working channel when the portion of the compression member extending external of the catheter is outside of and adjacent to the distal port of the endoscope working channel.

5. The catheter of claim 4, wherein the means for performing a medical procedure comprises a sphincterotome.

6. The catheter of claim 3, wherein the means for performing a medical procedure comprises a dilation balloon.

7. The catheter of claim 3, wherein the means for performing a medical procedure comprises an irrigation catheter.

8. The catheter of claim 3, wherein the means for performing a medical procedure comprises an electrosurgical probe.

9. The catheter of claim 3, wherein the means for performing a medical procedure comprises cutting forceps.

10. The catheter of claim 3, wherein the means for performing a medical procedure comprises a tissue sampling device.

11. The catheter of claim 1, further comprising at least one marker adjacent to at least one of the plurality of intermediate wire guide access ports.

12. The catheter of claim 1, wherein the plurality of intermediate wire guide access ports are located at least about 150 cm from the distal end of the catheter shaft.

13. The catheter of claim 1, wherein at least one of the plurality of intermediate wire guide access ports is located approximately 50 cm to 56 cm from the proximal end of the catheter shaft.

14. The catheter of claim 1, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the catheter shaft within the range of about 50 cm to 56 cm from the proximal end of the catheter shaft.

15. The catheter of claim 1, wherein at least one of the plurality of intermediate wire guide access ports is located approximately 144 cm to 150 cm from the distal end of the catheter shaft.

16. The catheter of claim 1, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the catheter shaft within the range of about 144 cm to 150 cm from the distal end of the catheter shaft.

17. The catheter of claim 1, the catheter shaft further comprising a proximal half and a distal half, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the proximal half of the catheter shaft.

18. A catheter comprising:
a catheter shaft of sufficient length to perform an endoscopic procedure in the biliary system having a proximal end, a distal end, and a wire guide lumen extending through the shaft between a proximal wire guide port and a distal wire guide port; and

a plurality of intermediate wire guide access ports located a not insubstantial distance distal of the proximal wire guide port and a not insubstantial distance proximal of the distal wire guide port,

wherein one or more sleeves are slidably disposed along the catheter shaft and are movable between a first position restricting access from exterior of the catheter through at least one of the intermediate wire guide access ports and a second position wherein access is not restricted.

19. The catheter of claim 18, further comprising a plurality of markers adjacent the plurality of intermediate wire guide access ports.

20. The catheter of claim 18, wherein the catheter is adapted for use with an endoscope having a working channel extending between a distal port and a proximal port and wherein the plurality of intermediate wire guide access ports are accessible outside the endoscope when the catheter is positioned through the working channel such that the distal end of the catheter and the distal port of the working channel are substantially aligned.

21. The catheter of claim 18, wherein the plurality of intermediate wire guide access ports are located at least about 150 cm from the distal end of the catheter shaft.

22. The catheter of claim 18, wherein at least one of the plurality of intermediate wire guide access ports is located approximately 50 cm to 56 cm from the proximal end of the catheter shaft.

23. The catheter of claim 18, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the catheter shaft within the range of about 50 cm to 56 cm from the proximal end of the catheter shaft.

24. The catheter of claim 18, wherein at least one of the plurality of intermediate wire guide access ports is located approximately 144 cm to 150 cm from the distal end of the catheter shaft.

25. The catheter of claim 18, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the catheter shaft within the range of about 144 cm to 150 cm from the distal end of the catheter shaft.

26. The catheter of claim 18, the catheter shaft further comprising a proximal half and a distal half, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the proximal half of the catheter shaft.

27. A system comprising an endoscope having a working channel extending between a distal port and a proximal port and a catheter having a shaft extending between a proximal end and a distal end, a wire guide lumen extending at least partially through the shaft, a plurality of intermediate wire guide access ports located between and spaced apart from the proximal end and the distal end, and a means disposed on the catheter shaft for allowing and restricting access to the wire guide lumen through the intermediate wire guide access ports, wherein the plurality of intermediate wire guide access ports are accessible outside the endoscope when the catheter is positioned inside the endoscope working channel such that the distal end of the catheter and the distal port of the endoscope working channel are aligned.

28. The system of claim 27, the catheter further comprising at least one marker near at least one of the plurality of intermediate wire guide access ports.

29. The system of claim 27, the catheter further comprising a proximal wire guide access port for accessing the wire guide lumen located a not insubstantial distance proximal of the intermediate wire guide access ports and a distal wire guide access port for accessing the wire guide lumen located a not insubstantial distance distal of the intermediate wire guide access ports.

30. The system of claim 27, wherein the plurality of intermediate wire guide access ports are located at least about 150 cm from the distal end of the catheter shaft.

31. The system of claim 27, wherein at least one of the plurality of intermediate wire guide access ports is located approximately 50 cm to 56 cm from the proximal end of the catheter shaft.

32. The system of claim 27, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the catheter shaft within the range of about 50 cm to 56 cm from the proximal end of the catheter shaft.

33. The system of claim 27, wherein at least one of the plurality of intermediate wire guide access ports is located approximately 144 cm to 150 cm from the distal end of the catheter shaft.

34. The system of claim 27, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the catheter shaft within the range of about 144 cm to 150 cm from the distal end of the catheter shaft.

35. The catheter of claim 27, the catheter shaft further comprising a proximal half and a distal half, wherein two of the plurality of intermediate wire guide access ports are each located in a spaced apart fashion on the proximal half of the catheter shaft.

36. A sphincterotome comprising:
a catheter shaft having a proximal end and a distal end;
a plurality of catheter lumens, including a lumen providing a passageway for injecting substances, a lumen including an electrically energizable compression member for cutting tissue, and a wire guide lumen extending from a proximal wire guide access port near the proximal end of the sphincterotome to a distal wire guide access port near the distal end of the sphincterotome; and
a plurality of intermediate wire guide access ports located between and spaced apart from the proximal end and the distal end,

wherein the sphincterotome is adapted for use with an endoscope having a working channel extending between a distal port and a proximal port and wherein the plurality of intermediate wire guide access ports are accessible outside the endoscope when the sphincterotome is positioned through the working channel such that the distal end of the catheter shaft and the distal port of the working channel are substantially aligned.

37. The sphincterotome of claim 36, further comprising at least one slidable tube for allowing and restricting access to at least one of the plurality of intermediate wire guide access ports.

38. The sphincterotome of claim 36, wherein the electrically energizable compression member for cutting tissue has a portion that is external of the catheter shaft and wherein at least one of the plurality of intermediate wire guide access ports is near a handle of the endoscope when the sphincterotome is positioned inside the endoscope working channel and when the external portion of the compression member is outside of and adjacent the endoscope working channel distal port.

39. A method comprising the steps of:

inserting a catheter having a proximal end, a distal end, a plurality of intermediate wire guide access ports, and a means for performing a medical procedure into an endoscope having a working channel extending between a distal port and a proximal port;

advancing the catheter through the working channel until the means for performing a medical procedure extends distally of the distal port of the endoscope working channel while maintaining a first intermediate wire guide access port of the plurality of intermediate wire guide access ports proximal of the proximal port of the endoscope working channel; and

advancing a wire guide through the first intermediate wire guide access port.

40. The method of claim 39, wherein the catheter includes at least one slidable tube for allowing and restricting access to the intermediate wire guide access ports, further comprising the step of opening a first slidable tube of the at least one slidable tube to allow access to the first intermediate wire guide access port.

41. The method of claim 39, further comprising the step of, while performing the step of advancing the catheter, advancing a second intermediate wire guide access port of the plurality of intermediate wire guide access ports into the endoscope working channel.

42. A method comprising the steps of:

inserting a catheter having a proximal wire guide port near a proximal end of the catheter, a distal wire guide port near a distal end of the catheter, a plurality of intermediate wire guide access ports including first and second intermediate wire guide access ports, at least one slidable tube for allowing and restricting access to the intermediate wire guide access ports, and a means for performing a medical procedure into an endoscope having a working channel extending between a distal port and a proximal port;

advancing the catheter through the working channel until the distal end of the catheter extends out through the distal port of the endoscope working channel, the first intermediate wire guide access port is disposed within the endoscope working channel, and the second intermediate wire guide access port is disposed proximally of the proximal port of the working channel;

opening one of the at least one slidable tube to allow access to the second intermediate wire guide access port; and

inserting a wire guide through the second intermediate wire guide access port.

43. A method comprising the steps of:

advancing a sphincterotome having a proximal end, a distal end, and a plurality of intermediate wire guide access ports a not insubstantial distance distal of the proximal end and a not insubstantial distance proximal of the distal end into an endoscope having a handle; and while a first intermediate wire guide access port of the plurality of intermediate wire guide access ports is near the handle of the endoscope, performing a sphincterotomy.

44. The method of claim 43, while the first intermediate wire guide access port of the plurality of wire guide access ports is near the handle of the endoscope, further comprising the step of advancing a wire guide through the first intermediate wire guide access port.

45. The method of claim 43, further comprising the step of sliding a first tube disposed along the sphincterotome to allow access to the first intermediate wire guide access port.